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Turner, C. Alexander Jr.

<120> Novel Human Protocadherin Proteins and Polynucleotides Encoding the Same

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 <212> PRT
 <213> homo sapiens

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10025225-121904

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Thr	Thr	Tyr	Ser	Val	Thr	Ile	Ala	Glu	Ser	Thr	Pro	Leu	Arg	Thr	Ser
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Tyr	Gly	Asn	Asn	Gly	Val	Ser	Ser	Thr	Ala	Lys	Leu	Tyr	Val	His	Ile
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Glu	Val	Asn	Val	Thr	Ile	Arg	Ile	Gly	Asn	Val	Asn	Asp	Asn	Ser	Pro
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10025225 121901

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Gln Ile Gln Ala Glu Asp Pro Asp Ser Ser Ser Asn Glu Lys Leu Thr	1170	1175	1180	
Tyr Arg Ile Thr Ser Gly Asn Pro Gln Asn Phe Phe Ala Ile Asn Ile	1185	1190	1195	1200
Lys Thr Gly Leu Ile Thr Thr Thr Ser Arg Lys Leu Asp Arg Glu Gln		1205	1210	1215
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Lys	Val	Val	Ser	Pro	Leu	Asp	Tyr	Glu	Val	Thr	Ser	Ala	Tyr	Lys	Leu		
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Thr	Ile	Arg	Ala	Ser	Asp	Ala	Leu	Thr	Gly	Ala	Arg	Ala	Glu	Val	Thr		
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Val	Asp	Leu	Leu	Val	Asn	Asp	Val	Asn	Asp	Asn	Pro	Pro	Ile	Phe	Asp		
		2275					2280					2285					
Gln	Pro	Thr	Tyr	Asn	Thr	Thr	Leu	Ser	Glu	Ala	Ser	Leu	Ile	Gly	Thr		
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Pro	Val	Leu	Gln	Val	Val	Ser	Ile	Asp	Ala	Asp	Ser	Glu	Asn	Asn	Lys		
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Met	Val	His	Tyr	Gln	Ile	Val	Gln	Asp	Thr	Tyr	Asn	Ser	Thr	Asp	Tyr		
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Phe	His	Ile	Asp	Ser	Ser	Ser	Gly	Leu	Ile	Leu	Thr	Ala	Arg	Met	Leu		
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Asp	His	Glu	Leu	Val	Gln	His	Cys	Thr	Leu	Lys	Val	Arg	Ser	Ile	Asp		
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Ser Gly Phe Pro Ser Leu Ser Ser Glu Val Leu Val His Ile Tyr Ile	2370	2375	2380
Ser Asp Val Asn Asp Asn Pro Pro Val Phe Asn Gln Leu Ile Tyr Glu	2385	2390	2395
Ser Tyr Val Ser Glu Leu Ala Pro Arg Gly His Phe Val Thr Cys Val	2405	2410	2415
Gln Ala Ser Asp Ala Asp Ser Ser Asp Phe Asp Arg Leu Glu Tyr Ser	2420	2425	2430
Ile Leu Ser Gly Asn Asp Arg Thr Ser Phe Leu Met Asp Ser Lys Ser	2435	2440	2445
Gly Val Ile Thr Leu Ser Asn His Arg Lys Gln Arg Met Glu Pro Leu	2450	2455	2460
Tyr Ser Leu Asn Val Ser Val Ser Asp Gly Leu Phe Thr Ser Thr Ala	2465	2470	2475
Gln Val His Ile Arg Val Leu Gly Ala Asn Leu Tyr Ser Pro Ala Phe	2485	2490	2495
Ser Gln Ser Thr Tyr Val Ala Glu Val Arg Glu Asn Val Ala Ala Gly	2500	2505	2510
Thr Lys Val Ile His Val Arg Ala Thr Asp Gly Asp Pro Gly Thr Tyr	2515	2520	2525
Gly Gln Ile Ser Tyr Ala Ile Ile Asn Asp Phe Ala Lys Asp Arg Phe	2530	2535	2540
Leu Ile Asp Ser Asn Gly Gln Val Ile Thr Thr Glu Arg Leu Asp Arg	2545	2550	2555
Glu Asn Pro Leu Glu Gly Asp Val Ser Ile Phe Val Arg Ala Leu Asp	2565	2570	2575
Gly Gly Gly Arg Thr Thr Phe Cys Thr Val Arg Val Ile Val Val Asp	2580	2585	2590
Glu Asn Asp Asn Ala Pro Gln Phe Met Thr Val Glu Tyr Arg Ala Ser	2595	2600	2605
Val Arg Ala Asp Val Gly Arg Gly His Leu Val Thr Gln Val Gln Ala	2610	2615	2620
Ile Asp Pro Asp Asp Gly Ala Asn Ser Arg Ile Thr Tyr Ser Leu Tyr	2625	2630	2635
Ser Glu Ala Ser Val Ser Val Ala Asp Leu Leu Glu Ile Asp Pro Asp	2645	2650	2655
Asn Gly Trp Met Val Thr Lys Gly Asn Phe Asn Gln Leu Lys Asn Thr	2660	2665	2670
Val Leu Ser Phe Phe Val Lys Ala Val Asp Gly Gly Ile Pro Val Lys	2675	2680	2685
His Ser Leu Ile Pro Val Tyr Ile His Val Leu Pro Pro Glu Thr Phe	2690	2695	2700
Leu Pro Ser Phe Thr Gln Ser Gln Tyr Ser Phe Thr Ile Ala Glu Asp	2705	2710	2715
Thr Ala Ile Gly Ser Thr Val Asp Thr Leu Arg Ile Leu Pro Ser Gln	2725	2730	2735
Asn Val Trp Phe Ser Thr Val Asn Gly Glu Arg Pro Glu Asn Asn Lys	2740	2745	2750
Gly Gly Val Phe Val Ile Glu Gln Glu Thr Gly Thr Ile Lys Leu Asp	2755	2760	2765
Lys Arg Leu Asp Arg Glu Thr Ser Pro Ala Phe His Phe Lys Val Ala	2770	2775	2780
Ala Thr Ile Pro Leu Asp Lys Val Asp Ile Val Phe Thr Val Asp Val	2785	2790	2795
Asp Ile Lys Val Leu Asp Leu Asn Asp Asn Lys Pro Val Phe Glu Thr	2805	2810	2815

Ser	Ser	Tyr	Asp	Thr	Ile	Ile	Met	Glu	Gly	Met	Pro	Val	Gly	Thr	Lys	2820	2825	2830
Leu	Thr	Gln	Val	Arg	Ala	Ile	Asp	Met	Asp	Trp	Gly	Ala	Asn	Gly	Gln	2835	2840	2845
Val	Thr	Tyr	Ser	Leu	His	Ser	Asp	Ser	Gln	Pro	Glu	Lys	Val	Met	Glu	2850	2855	2860
Ala	Phe	Asn	Ile	Asp	Ser	Asn	Thr	Gly	Trp	Ile	Ser	Thr	Leu	Lys	Asp	2865	2870	2875
Leu	Asp	His	Glu	Thr	Asp	Pro	Thr	Phe	Thr	Phe	Ser	Val	Val	Ala	Ser	2885	2890	2895
Asp	Leu	Gly	Glu	Ala	Phe	Ser	Leu	Ser	Ser	Thr	Ala	Leu	Val	Ser	Val	2900	2905	2910
Arg	Val	Thr	Asp	Ile	Asn	Asp	Asn	Ala	Pro	Val	Phe	Ala	Gln	Glu	Val	2915	2920	2925
Tyr	Arg	Gly	Asn	Val	Lys	Glu	Ser	Asp	Pro	Pro	Gly	Glu	Val	Val	Ala	2930	2935	2940
Val	Leu	Ser	Thr	Trp	Asp	Arg	Asp	Thr	Ser	Asp	Val	Asn	Arg	Gln	Val	2945	2950	2955
Ser	Tyr	His	Ile	Thr	Gly	Gly	Asn	Pro	Arg	Gly	Arg	Phe	Ala	Leu	Gly	2965	2970	2975
Leu	Val	Gln	Ser	Glu	Trp	Lys	Val	Tyr	Val	Lys	Arg	Pro	Leu	Asp	Arg	2980	2985	2990
Glu	Glu	Gln	Asp	Ile	Tyr	Phe	Leu	Asn	Ile	Thr	Ala	Thr	Asp	Gly	Leu	2995	3000	3005
Phe	Val	Thr	Gln	Ala	Met	Val	Glu	Val	Ser	Val	Ser	Asp	Val	Asn	Asp	3010	3015	3020
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Ala	Leu	Leu	Asp	Arg	Glu	Arg	Ile	Pro	Val	Tyr	Ser	Leu	Met	Ala	Lys	3090	3095	3100
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Ile Gly Thr Asn Ala Glu Ile Thr Tyr Leu Ile Arg Ser Gly Asn Glu	3265	3270	3275	3280
Gln Gly Lys Phe Lys Ile Asn Pro Lys Thr Gly Gly Ile Ser Val Ser		3285	3290	3295
Glu Val Leu Asp Tyr Glu Leu Cys Lys Arg Phe Tyr Leu Val Val Glu		3300	3305	3310
Ala Lys Asp Gly Gly Thr Pro Ala Leu Ser Ala Val Ala Thr Val Asn		3315	3320	3325
Ile Asn Leu Thr Asp Val Asn Asp Asn Pro Pro Lys Phe Ser Gln Asp		3330	3335	3340
Val Tyr Ser Ala Val Ile Ser Glu Asp Ala Leu Val Gly Asp Ser Val		3345	3350	3355
Ile Leu Leu Ile Ala Glu Asp Val Asp Ser Gln Pro Asn Gly Gln Ile		3365	3370	3375
His Phe Ser Ile Val Asn Gly Asp Arg Asp Asn Glu Phe Thr Val Asp		3380	3385	3390
Pro Val Leu Gly Leu Val Lys Val Lys Lys Lys Leu Asp Arg Glu Arg		3395	3400	3405
Val Ser Gly Tyr Ser Leu Leu Val Gln Ala Val Asp Ser Gly Ile Pro		3410	3415	3420
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Asp Asn Ser Pro Val Phe Thr Pro Ala Asn Tyr Thr Ala Val Ile Gln		3445	3450	3455
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Gly Asn Glu Glu Glu Glu Phe Val Leu Asp Pro His Gly Ile Leu Arg		3490	3495	3500
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Val Gln Ala Lys Asp Ser Gly Lys Pro Gln Gln Val Ser His Thr Tyr		3525	3530	3535
Ile Arg Val Arg Val Ile Glu Glu Ser Thr His Lys Pro Thr Ala Ile		3540	3545	3550
Pro Leu Glu Ile Phe Ile Val Thr Met Glu Asp Asp Phe Pro Gly Gly		3555	3560	3565
Val Ile Gly Lys Ile His Ala Thr Asp Gln Asp Met Tyr Asp Val Leu		3570	3575	3580
Thr Phe Ala Leu Lys Ser Glu Gln Lys Ser Leu Phe Lys Val Asn Ser		3585	3590	3595
His Asp Gly Lys Ile Ile Ala Leu Gly Gly Leu Asp Ser Gly Lys Tyr		3605	3610	3615
Val Leu Asn Val Ser Val Ser Asp Gly Arg Phe Gln Val Pro Ile Asp		3620	3625	3630
Val Val Val His Val Glu Gln Leu Val His Glu Met Leu Gln Asn Thr		3635	3640	3645
Val Thr Ile Arg Phe Glu Asn Val Ser Pro Glu Asp Phe Val Gly Leu		3650	3655	3660
His Met His Gly Phe Arg Arg Thr Leu Arg Asn Ala Val Leu Thr Gln		3665	3670	3675
Lys Gln Asp Ser Leu Arg Ile Ile Ser Ile Gln Pro Val Ala Gly Thr		3685	3690	3695
Asn Gln Leu Asp Met Leu Phe Ala Val Glu Met His Ser Ser Glu Phe		3700	3705	3710

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Asn	Ser	Gly	Ile	Lys	Asn	Gly		Asn	Phe	Ala	Leu	Arg	Ile	Thr	Ala	Thr	Asn	Ser	Gly	Ile	Lys	Asn	Gly		Asn	Phe	Ala	Leu	Arg	Ile	Thr	Ala	Thr	
645										650										655														
Asp	Gly	Glu	Asn	Leu	Ala	Asp		Pro	Met	Ser	Ile	Asn	Ile	Ser	Val	Leu	Asp	Gly	Glu	Asn	Leu	Ala	Asp		Pro	Met	Ser	Ile	Asn	Ile	Ser	Val	Leu	
660										665										670														
His	Gly	Lys	Val	Ser	Ser	Lys		Ser	Phe	Ser	Cys	Arg	Glu	Thr	Arg	Val	His	Gly	Lys	Val	Ser	Ser	Lys		Ser	Phe	Ser	Cys	Arg	Glu	Thr	Arg	Val	
675										680										685														
Ala	Gln	Lys	Leu	Ala	Glu	Lys		Leu	Leu	Ile	Lys	Ala	Lys	Ala	Asn	Gly	Ala	Gln	Lys	Leu	Ala	Glu	Lys		Leu	Leu	Ile	Lys	Ala	Lys	Ala	Asn	Gly	
690										695										700														
Lys	Leu	Asn	Leu	Glu	Asp	Gly		Phe	Leu	Asp	Phe	Tyr	Ser	Ile	Asn	Arg	Lys	Leu	Asn	Leu	Glu	Asp	Gly		Phe	Leu	Asp	Phe	Tyr	Ser	Ile	Asn	Arg	
705										710										715														
Gln	Gly	Pro	Tyr	Phe	Asp	Lys		Ser	Phe	Pro	Ser	Asp	Val	Ala	Val	Lys	Gln	Gly	Pro	Tyr	Phe	Asp	Lys		Ser	Phe	Pro	Ser	Asp	Val	Ala	Val	Lys	
725										730										735														
Glu	Asp	Leu	Pro	Val	Gly	Ala		Asn	Ile	Leu	Lys	Ile	Lys	Ala	Tyr	Asp	Glu	Asp	Leu	Pro	Val	Gly	Ala		Asn	Ile	Leu	Lys	Ile	Lys	Ala	Tyr	Asp	
740										745										750														
Ala	Asp	Ser	Gly	Phe	Asn	Gly		Lys	Val	Leu	Phe	Thr	Ile	Ser	Asp	Gly	Ala	Asp	Ser	Gly	Phe	Asn	Gly		Lys	Val	Leu	Phe	Thr	Ile	Ser	Asp	Gly	
755										760										765														
Asn	Thr	Asp	Ser	Cys	Phe	Asn		Ile	Asp	Met	Glu	Thr	Gly	Gln	Leu	Lys	Asn	Thr	Asp	Ser	Cys	Phe	Asn		Ile	Asp	Met	Glu	Thr	Gly	Gln	Leu	Lys	
770										775										780														
Val	Leu	Met	Pro	Met	Asp	Arg		Glu	His	Thr	Asp	Leu	Tyr	Leu	Leu	Asn	Val	Leu	Met	Pro	Met	Asp	Arg		Glu	His	Thr	Asp	Leu	Tyr	Leu	Leu	Asn	
785										790										795														
Ile	Thr	Ile	Tyr	Asp	Leu	Gly		Asn	Pro	Gln	Lys	Ser	Ser	Trp	Arg	Leu	Ile	Thr	Ile	Tyr	Asp	Leu	Gly		Asn	Pro	Gln	Lys	Ser	Ser	Trp	Arg	Leu	
805										810										815														
Leu	Thr	Ile	Asn	Val	Glu	Asp		Ala	Asn	Asp	Asn	Ser	Pro	Val	Phe	Ile	Leu	Thr	Ile	Asn	Val	Glu	Asp		Ala	Asn	Asp	Asn	Ser	Pro	Val	Phe	Ile	
820										825										830														
Gln	Asp	Ser	Tyr	Ser	Val	Asn		Ile	Leu	Glu	Ser	Ser	Gly	Ile	Gly	Thr	Gln	Asp	Ser	Tyr	Ser	Val	Asn		Ile	Leu	Glu	Ser	Ser	Gly	Ile	Gly	Thr	
835										840										845														
Glu	Ile	Ile	Gln	Val	Glu	Ala		Arg	Asp	Lys	Asp	Leu	Gly	Ser	Asn	Gly	Glu	Ile	Ile	Gln	Val	Glu	Ala		Arg	Asp	Lys	Asp	Leu	Gly	Ser	Asn	Gly	
850										855										860														
Glu	Val	Thr	Tyr	Ser	Val	Leu		Thr	Asp	Thr	Gln	Gln	Phe	Ala	Ile	Asn	Glu	Val	Thr	Tyr	Ser	Val	Leu		Thr	Asp	Thr	Gln	Gln	Phe	Ala	Ile	Asn	
865										870										875														
Ser	Ser	Thr	Gly	Ile	Val	Tyr		Val	Ala	Asp	Gln	Leu	Asp	Arg	Glu	Ser	Ser	Ser	Thr	Gly	Ile	Val	Tyr		Val	Ala	Asp	Gln	Leu	Asp	Arg	Glu	Ser	
885										890										895														
Lys	Ala	Asn	Tyr	Ser	Leu	Lys		Ile	Glu	Ala	Arg	Asp	Lys	Ala	Glu	Ser	Lys	Ala	Asn	Tyr	Ser	Leu	Lys		Ile	Glu	Ala	Arg	Asp	Lys	Ala	Glu	Ser	
900										905										910														
Gly	Gln	Gln	Leu	Phe	Ser	Val		Val	Thr	Leu	Lys	Val	Phe	Leu	Asp	Asp	Gly	Gln	Gln	Leu	Phe	Ser	Val		Val	Thr	Leu	Lys	Val	Phe	Leu	Asp	Asp	
915										920										925														
Val	Asn	Asp	Cys	Ser	Pro	Ala		Phe	Ile	Pro	Ser	Ser	Tyr	Ser	Val	Lys	Val	Asn	Asp	Cys	Ser	Pro	Ala		Phe	Ile	Pro	Ser	Ser	Tyr	Ser	Val	Lys	
930										935										940														
Val	Leu	Glu	Asp	Leu	Pro	Val		Gly	Thr	Val	Ile	Ala	Trp	Leu	Glu	Thr	Val	Leu	Glu	Asp	Leu	Pro	Val		Gly	Thr	Val	Ile	Ala	Trp	Leu	Glu	Thr	
945										950										955														
His	Asp	Pro	Asp	Leu	Gly	Leu		Gly	Gly	Gln	Val	Arg	Tyr	Ser	Leu	Val	His	Asp	Pro	Asp	Leu	Gly	Leu		Gly	Gly	Gln	Val	Arg	Tyr	Ser	Leu	Val	
965										970										975														
Asn	Asp	Tyr	Asn	Gly	Arg	Phe		Glu	Ile	Asp	Lys	Ala	Ser	Gly	Ala	Ile	Asn	Asp	Tyr	Asn	Gly	Arg	Phe		Glu	Ile	Asp	Lys	Ala	Ser	Gly	Ala	Ile	
980										985										990														
Arg	Leu	Ser	Lys	Glu	Leu	Asp		Tyr	Glu	Lys	Gln	Gln	Phe	Tyr	Asn	Leu	Arg	Leu	Ser	Lys	Glu	Leu	Asp		Tyr	Glu	Lys	Gln	Gln	Phe	Tyr	Asn	Leu	
995										1000										1005														
Thr	Val	Arg	Ala	Lys	Asp	Lys		Gly	Arg	Pro	Val	Ser	Leu	Ser	Ser	Val	Thr	Val	Arg	Ala	Lys	Asp	Lys		Gly	Arg	Pro	Val	Ser	Leu	Ser	Ser	Val	
1010										1015										1020														
Ser	Phe	Val	Glu	Val	Glu	Val		Val	Asp	Val	Asn	Glu	Asn	Leu	His	Thr	Ser	Phe	Val	Glu	Val	Glu	Val		Val	Asp	Val	Asn	Glu	Asn	Leu	His	Thr	

1025		1030		1035		1040
Pro Tyr Phe Pro Asp Phe Ala Val Val Gly Ser Val Lys Glu Asn Ser						
	1045		1050		1055	
Arg Ile Gly Thr Ser Val Leu Gln Val Thr Ala Arg Asp Glu Asp Ser						
	1060		1065		1070	
Gly Arg Asp Gly Glu Ile Gln Tyr Ser Ile Arg Asp Gly Ser Gly Leu						
	1075		1080		1085	
Gly Arg Phe Ser Ile Asp Asp Glu Ser Gly Val Ile Thr Ala Ala Asp						
	1090		1095		1100	
Ile Leu Asp Arg Glu Thr Met Gly Ser Tyr Trp Leu Thr Val Tyr Ala						
1105	1110		1115		1120	
Thr Asp Arg Gly Val Val Pro Leu Tyr Ser Thr Ile Glu Val Tyr Ile						
	1125		1130		1135	
Glu Val Glu Asp Val Asn Asp Asn Ala Pro Leu Thr Ser Glu Pro Ile						
	1140		1145		1150	
Tyr Tyr Pro Val Val Met Glu Asn Ser Pro Lys Asp Val Ser Val Ile						
	1155		1160		1165	
Gln Ile Gln Ala Glu Asp Pro Asp Ser Ser Ser Asn Glu Lys Leu Thr						
1170	1175		1180			
Tyr Arg Ile Thr Ser Gly Asn Pro Gln Asn Phe Phe Ala Ile Asn Ile						
1185	1190		1195		1200	
Lys Thr Gly Leu Ile Thr Thr Thr Ser Arg Lys Leu Asp Arg Glu Gln						
	1205		1210		1215	
Gln Ala Glu His Phe Leu Glu Val Thr Val Thr Asp Gly Gly Pro Ser						
	1220		1225		1230	
Pro Lys Gln Ser Thr Ile Trp Val Val Val Gln Val Leu Asp Glu Asn						
	1235		1240		1245	
Asp Asn Lys Pro Gln Phe Pro Glu Lys Val Tyr Gln Ile Lys Leu Pro						
	1250		1255		1260	
Glu Arg Asp Arg Lys Lys Arg Gly Glu Pro Ile Tyr Arg Ala Phe Ala						
1265	1270		1275		1280	
Phe Asp Arg Asp Glu Gly Pro Asn Ala Glu Ile Ser Tyr Ser Ile Val						
	1285		1290		1295	
Asp Gly Asn Asp Asp Gly Lys Phe Phe Ile Asp Pro Lys Thr Gly Met						
	1300		1305		1310	
Val Ser Ser Arg Lys Gln Phe Thr Ala Gly Ser Tyr Asp Ile Leu Thr						
	1315		1320		1325	
Ile Lys Ala Val Asp Asn Gly Arg Pro Gln Lys Ser Ser Thr Ala Arg						
	1330		1335		1340	
Leu His Ile Glu Trp Ile Lys Lys Pro Pro Pro Ser Pro Ile Pro Leu						
1345	1350		1355		1360	
Thr Phe Asp Glu Pro Phe Tyr Asn Phe Thr Val Met Glu Ser Asp Arg						
	1365		1370		1375	
Val Thr Glu Ile Val Gly Val Val Ser Val Gln Pro Ala Asn Thr Pro						
	1380		1385		1390	
Leu Trp Phe Asp Ile Val Gly Gly Asn Phe Asp Ser Ala Phe Asp Ala						
	1395		1400		1405	
Glu Lys Gly Val Gly Thr Ile Val Ile Ala Lys Pro Leu Asp Ala Glu						
	1410		1415		1420	
Gln Arg Ser Ile Tyr Asn Met Ser Val Glu Val Thr Asp Gly Thr Asn						
1425	1430		1435		1440	
Val Ala Val Thr Gln Val Phe Ile Lys Val Leu Asp Asn Asn Asp Asn						
	1445		1450		1455	
Gly Pro Glu Phe Ser Gln Pro Asn Tyr Asp Val Thr Ile Ser Glu Asp						
	1460		1465		1470	
Val Leu Pro Asp Thr Glu Ile Leu Gln Ile Glu Ala Thr Asp Arg Asp						

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1475	1480	1485
Glu Lys His Lys Leu Ser Tyr Thr Val His Ser Ser Ile Asp Ser Ile		
1490	1495	1500
Ser Met Arg Lys Phe Arg Ile Asp Pro Ser Thr Gly Val Leu Tyr Thr		
1505	1510	1515
Ala Glu Arg Leu Asp His Glu Ala Gln Asp Lys His Ile Leu Asn Ile		
1525	1530	1535
Met Val Arg Asp Gln Glu Phe Pro Tyr Arg Arg Asn Leu Ala Arg Val		
1540	1545	1550
Ile Val Asn Val Glu Asp Ala Asn Asp His Ser Pro Tyr Phe Thr Asn		
1555	1560	1565
Pro Leu Tyr Glu Ala Ser Val Phe Glu Ser Ala Ala Leu Gly Ser Ala		
1570	1575	1580
Val Leu Gln Val Thr Ala Leu Asp Lys Asp Lys Gly Glu Asn Ala Glu		
1585	1590	1595
Leu Ile Tyr Thr Ile Glu Ala Gly Asn Thr Gly Asn Met Phe Lys Ile		
1605	1610	1615
Glu Pro Val Leu Gly Ile Ile Thr Ile Cys Lys Glu Pro Asp Met Thr		
1620	1625	1630
Thr Met Gly Gln Phe Val Leu Ser Ile Lys Val Thr Asp Gln Gly Ser		
1635	1640	1645
Pro Pro Met Ser Ala Thr Ala Ile Val Arg Ile Ser Val Thr Met Ser		
1650	1655	1660
Asp Asn Ser His Pro Lys Phe Ile His Lys Asp Tyr Gln Ala Glu Val		
1665	1670	1675
Asn Glu Asn Val Asp Ile Gly Thr Ser Val Ile Leu Ile Ser Ala Ile		
1685	1690	1695
Ser Gln Ser Thr Leu Ile Tyr Glu Val Lys Asp Gly Asp Ile Asn Gly		
1700	1705	1710
Ile Phe Thr Ile Asn Pro Tyr Ser Gly Val Ile Thr Thr Gln Lys Ala		
1715	1720	1725
Leu Asp Tyr Glu Arg Thr Ser Ser Tyr Gln Leu Ile Ile Gln Ala Thr		
1730	1735	1740
Asn Met Ala Gly Met Ala Ser Asn Ala Thr Val Asn Ile Gln Ile Val		
1745	1750	1755
Asp Glu Asn Asp Asn Ala Pro Val Phe Leu Phe Ser Gln Tyr Ser Gly		
1765	1770	1775
Ser Leu Ser Glu Ala Ala Pro Ile Asn Ser Ile Val Arg Ser Leu Asp		
1780	1785	1790
Asn Ser Pro Leu Val Ile Arg Ala Thr Asp Ala Asp Ser Asn Arg Asn		
1795	1800	1805
Ala Leu Leu Val Tyr Gln Ile Val Glu Ser Thr Ala Lys Lys Phe Phe		
1810	1815	1820
Thr Val Asp Ser Ser Thr Gly Ala Ile Arg Thr Ile Ala Asn Leu Asp		
1825	1830	1835
His Glu Thr Ile Ala His Phe His Phe His Val His Val Arg Asp Ser		
1845	1850	1855
Gly Ser Pro Gln Leu Thr Ala Glu Ser Pro Val Glu Val Asn Ile Glu		
1860	1865	1870
Val Thr Asp Val Asn Asp Asn Pro Pro Val Phe Thr Gln Ala Val Phe		
1875	1880	1885
Glu Thr Ile Leu Leu Leu Pro Thr Tyr Val Gly Val Glu Val Leu Lys		
1890	1895	1900
Val Ser Ala Thr Asp Pro Asp Ser Glu Val Pro Pro Glu Leu Thr Tyr		
1905	1910	1915
Ser Leu Met Glu Gly Ser Leu Asp His Phe Leu Ile Asp Ser Asn Ser		

				1925					1930					1935
Gly	Val	Leu	Thr	Ile	Lys	Asn	Asn	Asn	Leu	Ser	Lys	Asp	His	Tyr
				1940					1945					1950
Leu	Ile	Val	Lys	Val	Ser	Asp	Gly	Lys	Phe	Tyr	Ser	Thr	Ser	Met
				1955					1960					1965
Thr	Ile	Met	Val	Lys	Glu	Ala	Met	Asp	Ser	Gly	Leu	His	Phe	Thr
				1970					1975					1980
Ser	Phe	Tyr	Ser	Thr	Ser	Ile	Ser	Glu	Asn	Asn	Thr	Asn	Ile	Thr
														2000
Val	Ala	Ile	Val	Asn	Ala	Val	Gly	Asn	Arg	Leu	Asn	Glu	Pro	Leu
														2015
Tyr	Ser	Ile	Leu	Asn	Pro	Gly	Asn	Lys	Phe	Lys	Ile	Lys	Ser	Thr
														2030
Gly	Val	Ile	Gln	Thr	Thr	Gly	Val	Pro	Phe	Asp	Arg	Glu	Glu	Gln
														2045
Leu	Tyr	Glu	Leu	Val	Val	Glu	Ala	Ser	Arg	Glu	Leu	Asp	His	Leu
														2060
Val	Ala	Arg	Val	Val	Val	Arg	Val	Asn	Ile	Glu	Asp	Ile	Asn	Asp
														2080
Ser	Pro	Val	Phe	Val	Gly	Leu	Pro	Tyr	Tyr	Ala	Ala	Val	Gln	Val
														2095
Ala	Glu	Pro	Gly	Thr	Leu	Ile	Tyr	Gln	Val	Thr	Ala	Ile	Asp	Lys
														2110
Lys	Gly	Pro	Asn	Gly	Glu	Val	Thr	Tyr	Val	Leu	Gln	Asp	Asp	Tyr
														2125
His	Phe	Glu	Ile	Asn	Pro	Asn	Ser	Gly	Asn	Val	Ile	Leu	Lys	Glu
														2140
Phe	Asn	Ser	Asp	Leu	Ser	Asn	Ile	Glu	Tyr	Gly	Val	Thr	Ile	Leu
														2160
Lys	Asp	Gly	Gly	Lys	Pro	Ser	Leu	Ser	Thr	Ser	Val	Glu	Leu	Pro
														2175
Thr	Ile	Val	Asn	Lys	Ala	Met	Pro	Val	Phe	Asp	Lys	Pro	Phe	Tyr
														2190
Ala	Ser	Val	Asn	Glu	Asp	Ile	Arg	Met	Asn	Thr	Pro	Ile	Leu	Ser
														2205
Asn	Ala	Thr	Ser	Pro	Glu	Gly	Gln	Gly	Ile	Ile	Tyr	Ile	Ile	Ile
														2220
Gly	Asp	Pro	Phe	Lys	Gln	Phe	Asn	Ile	Asp	Phe	Asp	Thr	Gly	Val
														2240
Lys	Val	Val	Ser	Pro	Leu	Asp	Tyr	Glu	Val	Thr	Ser	Ala	Tyr	Lys
														2255
Thr	Ile	Arg	Ala	Ser	Asp	Ala	Leu	Thr	Gly	Ala	Arg	Ala	Glu	Val
														2270
Val	Asp	Leu	Leu	Val	Asn	Asp	Val	Asn	Asp	Asn	Pro	Pro	Ile	Phe
														2285
Gln	Pro	Thr	Tyr	Asn	Thr	Thr	Leu	Ser	Glu	Ala	Ser	Leu	Ile	Gly
														2300
Pro	Val	Leu	Gln	Val	Val	Ser	Ile	Asp	Ala	Asp	Ser	Glu	Asn	Asn
														2320
Met	Val	His	Tyr	Gln	Ile	Val	Gln	Asp	Thr	Tyr	Asn	Ser	Thr	Asp
														2335
Phe	His	Ile	Asp	Ser	Ser	Ser	Gly	Leu	Ile	Leu	Thr	Ala	Arg	Met
														2350
Asp	His	Glu	Leu	Val	Gln	His	Cys	Thr	Leu	Lys	Val	Arg	Ser	Ile
														2365
Ser	Gly	Phe	Pro	Ser	Leu	Ser	Ser	Glu	Val	Leu	Val	His	Ile	Tyr

2370	2375	2380
Ser Asp Val Asn Asp Asn Pro Pro Val Phe Asn Gln Leu Ile Tyr Glu		
2385	2390	2395
Ser Tyr Val Ser Glu Leu Ala Pro Arg Gly His Phe Val Thr Cys Val		2400
	2405	2410
Gln Ala Ser Asp Ala Asp Ser Ser Asp Phe Asp Arg Leu Glu Tyr Ser		2415
	2420	2425
Ile Leu Ser Gly Asn Asp Arg Thr Ser Phe Leu Met Asp Ser Lys Ser		2430
	2435	2440
Gly Val Ile Thr Leu Ser Asn His Arg Lys Gln Arg Met Glu Pro Leu		2445
	2450	2455
Tyr Ser Leu Asn Val Ser Val Ser Asp Gly Leu Phe Thr Ser Thr Ala		2460
2465	2470	2475
Gln Val His Ile Arg Val Leu Gly Ala Asn Leu Tyr Ser Pro Ala Phe		2480
	2485	2490
Ser Gln Ser Thr Tyr Val Ala Glu Val Arg Glu Asn Val Ala Ala Gly		2495
	2500	2505
Thr Lys Val Ile His Val Arg Ala Thr Asp Gly Asp Pro Gly Thr Tyr		2510
	2515	2520
Gly Gln Ile Ser Tyr Ala Ile Ile Asn Asp Phe Ala Lys Asp Arg Phe		2525
	2530	2535
Leu Ile Asp Ser Asn Gly Gln Val Ile Thr Thr Glu Arg Leu Asp Arg		2540
2545	2550	2555
Glu Asn Pro Leu Glu Gly Asp Val Ser Ile Phe Val Arg Ala Leu Asp		2560
	2565	2570
Gly Gly Gly Arg Thr Thr Phe Cys Thr Val Arg Val Ile Val Val Asp		2575
	2580	2585
Glu Asn Asp Asn Ala Pro Gln Phe Met Thr Val Glu Tyr Arg Ala Ser		2590
	2595	2600
Val Arg Ala Asp Val Gly Arg Gly His Leu Val Thr Gln Val Gln Ala		2605
	2610	2615
Ile Asp Pro Asp Asp Gly Ala Asn Ser Arg Ile Thr Tyr Ser Leu Tyr		2620
2625	2630	2635
Ser Glu Ala Ser Val Ser Val Ala Asp Leu Leu Glu Ile Asp Pro Asp		2640
	2645	2650
Asn Gly Trp Met Val Thr Lys Gly Asn Phe Asn Gln Leu Lys Asn Thr		2655
	2660	2665
Val Leu Ser Phe Phe Val Lys Ala Val Asp Gly Gly Ile Pro Val Lys		2670
	2675	2680
His Ser Leu Ile Pro Val Tyr Ile His Val Leu Pro Pro Glu Thr Phe		2685
	2690	2695
Leu Pro Ser Phe Thr Gln Ser Gln Tyr Ser Phe Thr Ile Ala Glu Asp		2700
2705	2710	2715
Thr Ala Ile Gly Ser Thr Val Asp Thr Leu Arg Ile Leu Pro Ser Gln		2720
	2725	2730
Asn Val Trp Phe Ser Thr Val Asn Gly Glu Arg Pro Glu Asn Asn Lys		2735
	2740	2745
Gly Gly Val Phe Val Ile Glu Gln Glu Thr Gly Thr Ile Lys Leu Asp		2750
	2755	2760
Lys Arg Leu Asp Arg Glu Thr Ser Pro Ala Phe His Phe Lys Val Ala		2765
	2770	2775
Ala Thr Ile Pro Leu Asp Lys Val Asp Ile Val Phe Thr Val Asp Val		2780
2785	2790	2795
Asp Ile Lys Val Leu Asp Leu Asn Asp Asn Lys Pro Val Phe Glu Thr		2800
	2805	2810
Ser Ser Tyr Asp Thr Ile Ile Met Glu Gly Met Pro Val Gly Thr Lys		2815

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3265	3270	3275	3280
Gln Gly Lys Phe Lys Ile Asn Pro Lys Thr Gly Gly Ile Ser Val Ser			
	3285	3290	3295
Glu Val Leu Asp Tyr Glu Leu Cys Lys Arg Phe Tyr Leu Val Val Glu			
	3300	3305	3310
Ala Lys Asp Gly Gly Thr Pro Ala Leu Ser Ala Val Ala Thr Val Asn			
	3315	3320	3325
Ile Asn Leu Thr Asp Val Asn Asp Asn Pro Pro Lys Phe Ser Gln Asp			
	3330	3335	3340
Val Tyr Ser Ala Val Ile Ser Glu Asp Ala Leu Val Gly Asp Ser Val			
	3345	3350	3355
Ile Leu Leu Ile Ala Glu Asp Val Asp Ser Gln Pro Asn Gly Gln Ile			
	3365	3370	3375
His Phe Ser Ile Val Asn Gly Asp Arg Asp Asn Glu Phe Thr Val Asp			
	3380	3385	3390
Pro Val Leu Gly Leu Val Lys Val Lys Lys Lys Leu Asp Arg Glu Arg			
	3395	3400	3405
Val Ser Gly Tyr Ser Leu Leu Val Gln Ala Val Asp Ser Gly Ile Pro			
	3410	3415	3420
Ala Met Ser Ser Thr Ala Thr Val Asn Ile Asp Ile Ser Asp Val Asn			
	3425	3430	3435
Asp Asn Ser Pro Val Phe Thr Pro Ala Asn Tyr Thr Ala Val Ile Gln			
	3445	3450	3455
Glu Asn Lys Pro Val Gly Thr Ser Ile Leu Gln Leu Val Val Thr Asp			
	3460	3465	3470
Arg Asp Ser Phe His Asn Gly Pro Pro Phe Ser Phe Ser Ile Leu Ser			
	3475	3480	3485
Gly Asn Glu Glu Glu Glu Phe Val Leu Asp Pro His Gly Ile Leu Arg			
	3490	3495	3500
Ser Ala Val Val Phe Gln His Thr Glu Ser Leu Glu Tyr Val Leu Cys			
	3505	3510	3515
Val Gln Ala Lys Asp Ser Gly Lys Pro Gln Gln Val Ser His Thr Tyr			
	3525	3530	3535
Ile Arg Val Arg Val Ile Glu Glu Ser Thr His Lys Pro Thr Ala Ile			
	3540	3545	3550
Pro Leu Glu Ile Phe Ile Val Thr Met Glu Asp Asp Phe Pro Gly Gly			
	3555	3560	3565
Val Ile Gly Lys Ile His Ala Thr Asp Gln Asp Met Tyr Asp Val Leu			
	3570	3575	3580
Thr Phe Ala Leu Lys Ser Glu Gln Lys Ser Leu Phe Lys Val Asn Ser			
	3585	3590	3595
His Asp Gly Lys Ile Ile Ala Leu Gly Gly Leu Asp Ser Gly Lys Tyr			
	3605	3610	3615
Val Leu Asn Val Ser Val Ser Asp Gly Arg Phe Gln Val Pro Ile Asp			
	3620	3625	3630
Val Val Val His Val Glu Gln Leu Val His Glu Met Leu Gln Asn Thr			
	3635	3640	3645
Val Thr Ile Arg Phe Glu Asn Val Ser Pro Glu Asp Phe Val Gly Leu			
	3650	3655	3660
His Met His Gly Phe Arg Arg Thr Leu Arg Asn Ala Val Leu Thr Gln			
	3665	3670	3675
Lys Gln Asp Ser Leu Arg Ile Ile Ser Ile Gln Pro Val Ala Gly Thr			
	3685	3690	3695
Asn Gln Leu Asp Met Leu Phe Ala Val Glu Met His Ser Ser Glu Phe			
	3700	3705	3710
Tyr Lys Pro Ala Tyr Leu Ile Gln Lys Leu Ser Asn Ala Arg Arg His			

aaaaatggca	attttggcct	cagaattaca	gcaactgatg	gagagaatct	tgcagacccc	1980
atgtctatta	acatttcagt	cctacatggg	aaagtgtctt	caaagagctt	cagttgcaga	2040
gaaactcgtg	tggctcaaaa	gctggcagag	aaactactca	ttaaggcaaa	agcaaatggg	2100
aaactgaatc	tggaagatgg	atttcttgac	ttttattcaa	ttaatagaca	gggaccatat	2160
tttgacaagt	cttttccttc	tgatgtggct	gtaaaggagg	atctgccagt	tggtgctaac	2220
attctgaaga	ttaaagccta	tgatgccgac	tctggcttca	atggaaaagt	gctatttaca	2280
atatcagatg	gaaatacggg	tagttgcttt	aatattgata	tggagactgg	gcagcttaaa	2340
gtccttatgc	ccatggatcg	agaacacaca	gacctctatc	tccttaatat	caccatctat	2400
gacttaggta	atccacagaa	atcgtcatgg	agaactgctga	ccatcaatgt	ggaggatgct	2460
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145	150	155
Val Thr Ile Ala Glu Ser Thr Pro Leu Arg Thr Ser Val Ala Gln Val		160
	165	170
Thr Ala Thr Asp Ala Asp Ile Gly Ser Asn Gly Glu Phe Tyr Tyr Tyr		175
	180	185
Phe Lys Asn Lys Val Asp Leu Phe Ser Val His Pro Thr Ser Gly Val		190
	195	200
Ile Ser Leu Ser Gly Arg Leu Asn Tyr Asp Glu Lys Asn Arg Tyr Asp		205
	210	215
Leu Glu Ile Leu Ala Val Asp Arg Gly Met Lys Leu Tyr Gly Asn Asn		220
225	230	235
Gly Val Ser Ser Thr Ala Lys Leu Tyr Val His Ile Glu Arg Ile Asn		240
	245	250
Glu His Ala Pro Thr Ile His Val Val Thr His Val Pro Phe Ser Leu		255
	260	265
Glu Lys Glu Pro Thr Tyr Ala Val Val Thr Val Asp Asp Leu Asp Asp		270
	275	280
Gly Ala Asn Gly Glu Ile Glu Ser Val Ser Ile Val Ala Gly Asp Pro		285
	290	295
Leu Asp Gln Phe Phe Leu Ala Lys Glu Gly Lys Trp Leu Asn Glu Tyr		300
305	310	315
Lys Ile Lys Glu Arg Lys Gln Ile Asp Trp Glu Ser Phe Pro Tyr Gly		320
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Tyr Asn Leu Thr Leu Gln Ala Lys Asp Lys Gly Ser Pro Gln Lys Cys		335
	340	345
Ser Ala Leu Lys Ala Val Tyr Ile Gly Asn Pro Thr Arg Asp Thr Val		350
	355	360
Pro Ile Arg Phe Glu Lys Glu Val Tyr Asp Val Ser Ile Ser Glu Phe		365
	370	375
Ser Pro Pro Gly Val Val Val Ala Ile Val Lys Leu Ser Pro Glu Pro		380
385	390	395
Ile Asp Val Glu Tyr Lys Leu Ser Pro Gly Glu Asp Ala Val Tyr Phe		400
	405	410
Lys Ile Asn Pro Arg Ser Gly Leu Ile Val Thr Ala Arg Pro Leu Asn		415
	420	425
Thr Val Lys Lys Glu Val Tyr Lys Leu Glu Val Thr Asn Lys Glu Gly		430
	435	440
Asp Leu Lys Ala Gln Val Thr Ile Ser Ile Glu Asp Ala Asn Asp His		445
	450	455
Thr Pro Glu Phe Gln Gln Pro Leu Tyr Asp Ala Tyr Val Asn Glu Ser		460
465	470	475
Val Pro Val Gly Thr Ser Val Leu Thr Val Ser Ala Ser Asp Lys Asp		480
	485	490
Lys Gly Glu Asn Gly Tyr Ile Thr Tyr Ser Ile Ala Ser Leu Asn Leu		495
	500	505
Leu Pro Phe Val Ile Asn Gln Phe Thr Gly Val Ile Ser Thr Thr Glu		510
	515	520
Glu Leu Asp Phe Glu Ser Ser Pro Glu Ile Tyr Arg Phe Ile Val Arg		525
	530	535
Ala Ser Asp Trp Gly Ser Pro Tyr Arg His Glu Ser Glu Val Asn Val		540
545	550	555
Thr Ile Arg Ile Gly Asn Val Asn Asp Asn Ser Pro Leu Phe Glu Lys		560
	565	570
Val Ala Cys Gln Gly Val Ile Ser Tyr Asp Phe Pro Val Gly Gly His		575

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Tyr	Lys	Ile	Ile	Ser	Gly	Asn	Glu	Leu	Gly	Phe	Phe	Tyr	Leu	Asn	Pro
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Val	Glu	Asp	Ala	Asn	Asp	Asn	Ser	Pro	Val	Phe	Ile	Gln	Asp	Ser	Tyr
820					825					830					
Ser	Val	Asn	Ile	Leu	Glu	Ser	Ser	Gly	Ile	Gly	Thr	Glu	Ile	Ile	Gln
835					840					845					
Val	Glu	Ala	Arg	Asp	Lys	Asp	Leu	Gly	Ser	Asn	Gly	Glu	Val	Thr	Tyr
850					855					860					
Ser	Val	Leu	Thr	Asp	Thr	Gln	Gln	Phe	Ala	Ile	Asn	Ser	Ser	Thr	Gly
865					870					875					
Ile	Val	Tyr	Val	Ala	Asp	Gln	Leu	Asp	Arg	Glu	Ser	Lys	Ala	Asn	Tyr
885					890					895					
Ser	Leu	Lys	Ile	Glu	Ala	Arg	Asp	Lys	Ala	Glu	Ser	Gly	Gln	Gln	Leu
900					905					910					
Phe	Ser	Val	Val	Thr	Leu	Lys	Val	Phe	Leu	Asp	Asp	Val	Asn	Asp	Cys
915					920					925					
Ser	Pro	Ala	Phe	Ile	Pro	Ser	Ser	Tyr	Ser	Val	Lys	Val	Leu	Glu	Asp
930					935					940					
Leu	Pro	Val	Gly	Thr	Val	Ile	Ala	Trp	Leu	Glu	Thr	His	Asp	Pro	Asp
945					950					955					
Leu	Gly	Leu	Gly	Gly	Gln	Val	Arg	Tyr	Ser	Leu	Val	Asn	Asp	Tyr	Asn
965					970					975					
Gly	Arg	Phe	Glu	Ile	Asp	Lys	Ala	Ser	Gly	Ala	Ile	Arg	Leu	Ser	Lys
980					985					990					
Glu	Leu	Asp	Tyr	Glu	Lys	Gln	Gln	Phe	Tyr	Asn	Leu	Thr	Val	Arg	Ala
995					1000					1005					
Lys	Asp	Lys	Gly	Arg	Pro	Val	Ser	Leu	Ser	Ser	Val	Ser	Phe	Val	Glu
1010					1015					1020					
Val	Glu	Val	Val	Asp	Val	Asn	Glu	Asn	Leu	His	Thr	Pro	Tyr	Phe	Pro

1025		1030		1035		1040
Asp Phe Ala Val	Val Gly Ser Val Lys Glu Asn Ser Arg Ile Gly Thr					
	1045		1050		1055	
Ser Val Leu Gln Val Thr Ala Arg Asp Glu Asp Ser Gly Arg Asp Gly						
	1060		1065		1070	
Glu Ile Gln Tyr Ser Ile Arg Asp Gly Ser Gly Leu Gly Arg Phe Ser						
	1075		1080		1085	
Ile Asp Asp Glu Ser Gly Val Ile Thr Ala Ala Asp Ile Leu Asp Arg						
	1090		1095		1100	
Glu Thr Met Gly Ser Tyr Trp Leu Thr Val Tyr Ala Thr Asp Arg Gly						
1105	1110		1115		1120	
Val Val Pro Leu Tyr Ser Thr Ile Glu Val Tyr Ile Glu Val Glu Asp						
	1125		1130		1135	
Val Asn Asp Asn Ala Pro Leu Thr Ser Glu Pro Ile Tyr Tyr Pro Val						
	1140		1145		1150	
Val Met Glu Asn Ser Pro Lys Asp Val Ser Val Ile Gln Ile Gln Ala						
	1155		1160		1165	
Glu Asp Pro Asp Ser Ser Ser Asn Glu Lys Leu Thr Tyr Arg Ile Thr						
1170	1175		1180			
Ser Gly Asn Pro Gln Asn Phe Phe Ala Ile Asn Ile Lys Thr Gly Leu						
1185	1190		1195		1200	
Ile Thr Thr Thr Ser Arg Lys Leu Asp Arg Glu Gln Gln Ala Glu His						
	1205		1210		1215	
Phe Leu Glu Val Thr Val Thr Asp Gly Gly Pro Ser Pro Lys Gln Ser						
	1220		1225		1230	
Thr Ile Trp Val Val Val Gln Val Leu Asp Glu Asn Asp Asn Lys Pro						
	1235		1240		1245	
Gln Phe Pro Glu Lys Val Tyr Gln Ile Lys Leu Pro Glu Arg Asp Arg						
	1250		1255		1260	
Lys Lys Arg Gly Glu Pro Ile Tyr Arg Ala Phe Ala Phe Asp Arg Asp						
1265	1270		1275		1280	
Glu Gly Pro Asn Ala Glu Ile Ser Tyr Ser Ile Val Asp Gly Asn Asp						
	1285		1290		1295	
Asp Gly Lys Phe Phe Ile Asp Pro Lys Thr Gly Met Val Ser Ser Arg						
	1300		1305		1310	
Lys Gln Phe Thr Ala Gly Ser Tyr Asp Ile Leu Thr Ile Lys Ala Val						
	1315		1320		1325	
Asp Asn Gly Arg Pro Gln Lys Ser Ser Thr Ala Arg Leu His Ile Glu						
1330	1335		1340			
Trp Ile Lys Lys Pro Pro Pro Ser Pro Ile Pro Leu Thr Phe Asp Glu						
1345	1350		1355		1360	
Pro Phe Tyr Asn Phe Thr Val Met Glu Ser Asp Arg Val Thr Glu Ile						
	1365		1370		1375	
Val Gly Val Val Ser Val Gln Pro Ala Asn Thr Pro Leu Trp Phe Asp						
	1380		1385		1390	
Ile Val Gly Gly Asn Phe Asp Ser Ala Phe Asp Ala Glu Lys Gly Val						
	1395		1400		1405	
Gly Thr Ile Val Ile Ala Lys Pro Leu Asp Ala Glu Gln Arg Ser Ile						
1410	1415		1420			
Tyr Asn Met Ser Val Glu Val Thr Asp Gly Thr Asn Val Ala Val Thr						
1425	1430		1435		1440	
Gln Val Phe Ile Lys Val Leu Asp Asn Asn Asp Asn Gly Pro Glu Phe						
	1445		1450		1455	
Ser Gln Pro Asn Tyr Asp Val Thr Ile Ser Glu Asp Val Leu Pro Asp						
	1460		1465		1470	
Thr Glu Ile Leu Gln Ile Glu Ala Thr Asp Arg Asp Glu Lys His Lys						

1475					1480					1485					
Leu	Ser	Tyr	Thr	Val	His	Ser	Ser	Ile	Asp	Ser	Ile	Ser	Met	Arg	Lys
1490						1495				1500					
Phe	Arg	Ile	Asp	Pro	Ser	Thr	Gly	Val	Leu	Tyr	Thr	Ala	Glu	Arg	Leu
1505					1510					1515					1520
Asp	His	Glu	Ala	Gln	Asp	Lys	His	Ile	Leu	Asn	Ile	Met	Val	Arg	Asp
					1525					1530					1535
Gln	Glu	Phe	Pro	Tyr	Arg	Arg	Asn	Leu	Ala	Arg	Val	Ile	Val	Asn	Val
					1540					1545				1550	
Glu	Asp	Ala	Asn	Asp	His	Ser	Pro	Tyr	Phe	Thr	Asn	Pro	Leu	Tyr	Glu
					1555					1560				1565	
Ala	Ser	Val	Phe	Glu	Ser	Ala	Ala	Leu	Gly	Ser	Ala	Val	Leu	Gln	Val
					1570					1575				1580	
Thr	Ala	Leu	Asp	Lys	Asp	Lys	Gly	Glu	Asn	Ala	Glu	Leu	Ile	Tyr	Thr
1585					1590					1595					1600
Ile	Glu	Ala	Gly	Asn	Thr	Gly	Asn	Met	Phe	Lys	Ile	Glu	Pro	Val	Leu
					1605					1610				1615	
Gly	Ile	Ile	Thr	Ile	Cys	Lys	Glu	Pro	Asp	Met	Thr	Thr	Met	Gly	Gln
					1620					1625				1630	
Phe	Val	Leu	Ser	Ile	Lys	Val	Thr	Asp	Gln	Gly	Ser	Pro	Pro	Met	Ser
					1635					1640				1645	
Ala	Thr	Ala	Ile	Val	Arg	Ile	Ser	Val	Thr	Met	Ser	Asp	Asn	Ser	His
					1650					1655				1660	
Pro	Lys	Phe	Ile	His	Lys	Asp	Tyr	Gln	Ala	Glu	Val	Asn	Glu	Asn	Val
1665					1670					1675					1680
Asp	Ile	Gly	Thr	Ser	Val	Ile	Leu	Ile	Ser	Ala	Ile	Ser	Gln	Ser	Thr
					1685					1690					1695
Leu	Ile	Tyr	Glu	Val	Lys	Asp	Gly	Asp	Ile	Asn	Gly	Ile	Phe	Thr	Ile
					1700					1705				1710	
Asn	Pro	Tyr	Ser	Gly	Val	Ile	Thr	Thr	Gln	Lys	Ala	Leu	Asp	Tyr	Glu
					1715					1720				1725	
Arg	Thr	Ser	Ser	Tyr	Gln	Leu	Ile	Ile	Gln	Ala	Thr	Asn	Met	Ala	Gly
					1730					1735				1740	
Met	Ala	Ser	Asn	Ala	Thr	Val	Asn	Ile	Gln	Ile	Val	Asp	Glu	Asn	Asp
1745					1750					1755					1760
Asn	Ala	Pro	Val	Phe	Leu	Phe	Ser	Gln	Tyr	Ser	Gly	Ser	Leu	Ser	Glu
					1765					1770					1775
Ala	Ala	Pro	Ile	Asn	Ser	Ile	Val	Arg	Ser	Leu	Asp	Asn	Ser	Pro	Leu
					1780					1785				1790	
Val	Ile	Arg	Ala	Thr	Asp	Ala	Asp	Ser	Asn	Arg	Asn	Ala	Leu	Leu	Val
					1795					1800					1805
Tyr	Gln	Ile	Val	Glu	Ser	Thr	Ala	Lys	Lys	Phe	Phe	Thr	Val	Asp	Ser
					1810					1815				1820	
Ser	Thr	Gly	Ala	Ile	Arg	Thr	Ile	Ala	Asn	Leu	Asp	His	Glu	Thr	Ile
1825					1830					1835					1840
Ala	His	Phe	His	Phe	His	Val	His	Val	Arg	Asp	Ser	Gly	Ser	Pro	Gln
					1845					1850					1855
Leu	Thr	Ala	Glu	Ser	Pro	Val	Glu	Val	Asn	Ile	Glu	Val	Thr	Asp	Val
					1860					1865				1870	
Asn	Asp	Asn	Pro	Pro	Val	Phe	Thr	Gln	Ala	Val	Phe	Glu	Thr	Ile	Leu
					1875					1880				1885	
Leu	Leu	Pro	Thr	Tyr	Val	Gly	Val	Glu	Val	Leu	Lys	Val	Ser	Ala	Thr
					1890					1895				1900	
Asp	Pro	Asp	Ser	Glu	Val	Pro	Pro	Glu	Leu	Thr	Tyr	Ser	Leu	Met	Glu
1905					1910					1915					1920
Gly	Ser	Leu	Asp	His	Phe	Leu	Ile	Asp	Ser	Asn	Ser	Gly	Val	Leu	Thr

				1925						1930						1935
Ile	Lys	Asn	Asn	Asn	Leu	Ser	Lys	Asp	His	Tyr	Met	Leu	Ile	Val	Lys	
				1940						1945						1950
Val	Ser	Asp	Gly	Lys	Phe	Tyr	Ser	Thr	Ser	Met	Val	Thr	Ile	Met	Val	
				1955						1960						1965
Lys	Glu	Ala	Met	Asp	Ser	Gly	Leu	His	Phe	Thr	Gln	Ser	Phe	Tyr	Ser	
				1970						1975						1980
Thr	Ser	Ile	Ser	Glu	Asn	Asn	Thr	Asn	Ile	Thr	Lys	Val	Ala	Ile	Val	
1985																2000
Asn	Ala	Val	Gly	Asn	Arg	Leu	Asn	Glu	Pro	Leu	Lys	Tyr	Ser	Ile	Leu	
				2005						2010						2015
Asn	Pro	Gly	Asn	Lys	Phe	Lys	Ile	Lys	Ser	Thr	Ser	Gly	Val	Ile	Gln	
				2020						2025						2030
Thr	Thr	Gly	Val	Pro	Phe	Asp	Arg	Glu	Glu	Gln	Glu	Leu	Tyr	Glu	Leu	
				2035						2040						2045
Val	Val	Glu	Ala	Ser	Arg	Glu	Leu	Asp	His	Leu	Arg	Val	Ala	Arg	Val	
				2050						2055						2060
Val	Val	Arg	Val	Asn	Ile	Glu	Asp	Ile	Asn	Asp	Asn	Ser	Pro	Val	Phe	
2065																2080
Val	Gly	Leu	Pro	Tyr	Tyr	Ala	Ala	Val	Gln	Val	Asp	Ala	Glu	Pro	Gly	
				2085						2090						2095
Thr	Leu	Ile	Tyr	Gln	Val	Thr	Ala	Ile	Asp	Lys	Asp	Lys	Gly	Pro	Asn	
				2100						2105						2110
Gly	Glu	Val	Thr	Tyr	Val	Leu	Gln	Asp	Asp	Tyr	Gly	His	Phe	Glu	Ile	
				2115						2120						2125
Asn	Pro	Asn	Ser	Gly	Asn	Val	Ile	Leu	Lys	Glu	Ala	Phe	Asn	Ser	Asp	
				2130						2135						2140
Leu	Ser	Asn	Ile	Glu	Tyr	Gly	Val	Thr	Ile	Leu	Ala	Lys	Asp	Gly	Gly	
2145										2150						2160
Lys	Pro	Ser	Leu	Ser	Thr	Ser	Val	Glu	Leu	Pro	Ile	Thr	Ile	Val	Asn	
				2165						2170						2175
Lys	Ala	Met	Pro	Val	Phe	Asp	Lys	Pro	Phe	Tyr	Thr	Ala	Ser	Val	Asn	
				2180						2185						2190
Glu	Asp	Ile	Arg	Met	Asn	Thr	Pro	Ile	Leu	Ser	Ile	Asn	Ala	Thr	Ser	
				2195						2200						2205
Pro	Glu	Gly	Gln	Gly	Ile	Ile	Tyr	Ile	Ile	Ile	Asp	Gly	Asp	Pro	Phe	
				2210						2215						2220
Lys	Gln	Phe	Asn	Ile	Asp	Phe	Asp	Thr	Gly	Val	Leu	Lys	Val	Val	Ser	
2225										2230						2240
Pro	Leu	Asp	Tyr	Glu	Val	Thr	Ser	Ala	Tyr	Lys	Leu	Thr	Ile	Arg	Ala	
				2245						2250						2255
Ser	Asp	Ala	Leu	Thr	Gly	Ala	Arg	Ala	Glu	Val	Thr	Val	Asp	Leu	Leu	
				2260						2265						2270
Val	Asn	Asp	Val	Asn	Asp	Asn	Pro	Pro	Ile	Phe	Asp	Gln	Pro	Thr	Tyr	
				2275						2280						2285
Asn	Thr	Thr	Leu	Ser	Glu	Ala	Ser	Leu	Ile	Gly	Thr	Pro	Val	Leu	Gln	
				2290						2295						2300
Val	Val	Ser	Ile	Asp	Ala	Asp	Ser	Glu	Asn	Asn	Lys	Met	Val	His	Tyr	
2305										2310						2320
Gln	Ile	Val	Gln	Asp	Thr	Tyr	Asn	Ser	Thr	Asp	Tyr	Phe	His	Ile	Asp	
				2325						2330						2335
Ser	Ser	Ser	Gly	Leu	Ile	Leu	Thr	Ala	Arg	Met	Leu	Asp	His	Glu	Leu	
				2340						2345						2350
Val	Gln	His	Cys	Thr	Leu	Lys	Val	Arg	Ser	Ile	Asp	Ser	Gly	Phe	Pro	
				2355						2360						2365
Ser	Leu	Ser	Ser	Glu	Val	Leu	Val	His	Ile	Tyr	Ile	Ser	Asp	Val	Asn	

2370	2375	2380
Asp Asn Pro Pro Val Phe Asn Gln Leu Ile Tyr Glu Ser Tyr Val Ser		
2385	2390	2395
Glu Leu Ala Pro Arg Gly His Phe Val Thr Cys Val Gln Ala Ser Asp		2400
	2405	2410
Ala Asp Ser Ser Asp Phe Asp Arg Leu Glu Tyr Ser Ile Leu Ser Gly		2415
	2420	2425
Asn Asp Arg Thr Ser Phe Leu Met Asp Ser Lys Ser Gly Val Ile Thr		2430
	2435	2440
Leu Ser Asn His Arg Lys Gln Arg Met Glu Pro Leu Tyr Ser Leu Asn		2445
	2450	2455
Val Ser Val Ser Asp Gly Leu Phe Thr Ser Thr Ala Gln Val His Ile		2460
2465	2470	2475
Arg Val Leu Gly Ala Asn Leu Tyr Ser Pro Ala Phe Ser Gln Ser Thr		2480
	2485	2490
Tyr Val Ala Glu Val Arg Glu Asn Val Ala Ala Gly Thr Lys Val Ile		2495
	2500	2505
His Val Arg Ala Thr Asp Gly Asp Pro Gly Thr Tyr Gly Gln Ile Ser		2510
	2515	2520
Tyr Ala Ile Ile Asn Asp Phe Ala Lys Asp Arg Phe Leu Ile Asp Ser		2525
	2530	2535
Asn Gly Gln Val Ile Thr Thr Glu Arg Leu Asp Arg Glu Asn Pro Leu		2540
2545	2550	2555
Glu Gly Asp Val Ser Ile Phe Val Arg Ala Leu Asp Gly Gly Gly Arg		2560
	2565	2570
Thr Thr Phe Cys Thr Val Arg Val Ile Val Val Asp Glu Asn Asp Asn		2575
	2580	2585
Ala Pro Gln Phe Met Thr Val Glu Tyr Arg Ala Ser Val Arg Ala Asp		2590
	2595	2600
Val Gly Arg Gly His Leu Val Thr Gln Val Gln Ala Ile Asp Pro Asp		2605
	2610	2615
Asp Gly Ala Asn Ser Arg Ile Thr Tyr Ser Leu Tyr Ser Glu Ala Ser		2620
2625	2630	2635
Val Ser Val Ala Asp Leu Leu Glu Ile Asp Pro Asp Asn Gly Trp Met		2640
	2645	2650
Val Thr Lys Gly Asn Phe Asn Gln Leu Lys Asn Thr Val Leu Ser Phe		2655
	2660	2665
Phe Val Lys Ala Val Asp Gly Gly Ile Pro Val Lys His Ser Leu Ile		2670
	2675	2680
Pro Val Tyr Ile His Val Leu Pro Pro Glu Thr Phe Leu Pro Ser Phe		2685
	2690	2695
Thr Gln Ser Gln Tyr Ser Phe Thr Ile Ala Glu Asp Thr Ala Ile Gly		2700
2705	2710	2715
Ser Thr Val Asp Thr Leu Arg Ile Leu Pro Ser Gln Asn Val Trp Phe		2720
	2725	2730
Ser Thr Val Asn Gly Glu Arg Pro Glu Asn Asn Lys Gly Gly Val Phe		2735
	2740	2745
Val Ile Glu Gln Glu Thr Gly Thr Ile Lys Leu Asp Lys Arg Leu Asp		2750
	2755	2760
Arg Glu Thr Ser Pro Ala Phe His Phe Lys Val Ala Ala Thr Ile Pro		2765
	2770	2775
Leu Asp Lys Val Asp Ile Val Phe Thr Val Asp Val Asp Ile Lys Val		2780
2785	2790	2795
Leu Asp Leu Asn Asp Asn Lys Pro Val Phe Glu Thr Ser Ser Tyr Asp		2800
	2805	2810
Thr Ile Ile Met Glu Gly Met Pro Val Gly Thr Lys Leu Thr Gln Val		2815

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2820					2825					2830					
Arg	Ala	Ile	Asp	Met	Asp	Trp	Gly	Ala	Asn	Gly	Gln	Val	Thr	Tyr	Ser
2835					2840					2845					
Leu	His	Ser	Asp	Ser	Gln	Pro	Glu	Lys	Val	Met	Glu	Ala	Phe	Asn	Ile
2850					2855					2860					
Asp	Ser	Asn	Thr	Gly	Trp	Ile	Ser	Thr	Leu	Lys	Asp	Leu	Asp	His	Glu
2865					2870					2875					
Thr	Asp	Pro	Thr	Phe	Thr	Phe	Ser	Val	Val	Ala	Ser	Asp	Leu	Gly	Glu
2885					2890					2895					
Ala	Phe	Ser	Leu	Ser	Ser	Thr	Ala	Leu	Val	Ser	Val	Arg	Val	Thr	Asp
2900					2905					2910					
Ile	Asn	Asp	Asn	Ala	Pro	Val	Phe	Ala	Gln	Glu	Val	Tyr	Arg	Gly	Asn
2915					2920					2925					
Val	Lys	Glu	Ser	Asp	Pro	Pro	Gly	Glu	Val	Val	Ala	Val	Leu	Ser	Thr
2930					2935					2940					
Trp	Asp	Arg	Asp	Thr	Ser	Asp	Val	Asn	Arg	Gln	Val	Ser	Tyr	His	Ile
2945					2950					2955					
Thr	Gly	Gly	Asn	Pro	Arg	Gly	Arg	Phe	Ala	Leu	Gly	Leu	Val	Gln	Ser
2965					2970					2975					
Glu	Trp	Lys	Val	Tyr	Val	Lys	Arg	Pro	Leu	Asp	Arg	Glu	Glu	Gln	Asp
2980					2985					2990					
Ile	Tyr	Phe	Leu	Asn	Ile	Thr	Ala	Thr	Asp	Gly	Leu	Phe	Val	Thr	Gln
2995					3000					3005					
Ala	Met	Val	Glu	Val	Ser	Val	Ser	Asp	Val	Asn	Asp	Asn	Ser	Pro	Val
3010					3015					3020					
Cys	Asp	Gln	Val	Ala	Tyr	Thr	Ala	Leu	Leu	Pro	Glu	Asp	Ile	Pro	Ser
3025					3030					3035					
Asn	Lys	Ile	Ile	Leu	Lys	Val	Ser	Ala	Lys	Asp	Ala	Asp	Ile	Gly	Ser
3045					3050					3055					
Asn	Gly	Tyr	Ile	Arg	Tyr	Ser	Leu	Tyr	Gly	Ser	Gly	Asn	Ser	Glu	Phe
3060					3065					3070					
Phe	Leu	Asp	Pro	Glu	Ser	Gly	Glu	Leu	Lys	Thr	Leu	Ala	Leu	Leu	Asp
3075					3080					3085					
Arg	Glu	Arg	Ile	Pro	Val	Tyr	Ser	Leu	Met	Ala	Lys	Ala	Thr	Asp	Gly
3090					3095					3100					
Gly	Gly	Arg	Phe	Cys	Gln	Ser	Asn	Ile	His	Leu	Ile	Leu	Glu	Asp	Val
3105					3110					3115					
Asn	Asp	Asn	Pro	Pro	Val	Phe	Ser	Ser	Asp	His	Tyr	Asn	Thr	Cys	Val
3125					3130					3135					
Tyr	Glu	Asn	Thr	Ala	Thr	Lys	Ala	Leu	Leu	Thr	Arg	Val	Gln	Ala	Val
3140					3145					3150					
Asp	Pro	Asp	Ile	Gly	Ile	Asn	Arg	Lys	Val	Val	Tyr	Ser	Leu	Ala	Asp
3155					3160					3165					
Ser	Ala	Gly	Gly	Val	Phe	Ser	Ile	Asp	Ser	Ser	Ser	Ser	Gly	Ile	Ile
3170					3175					3180					
Leu	Glu	Gln	Pro	Leu	Asp	Arg	Glu	Gln	Gln	Ser	Ser	Tyr	Asn	Ile	Ser
3185					3190					3195					
Val	Arg	Ala	Thr	Asp	Gln	Ser	Pro	Gly	Gln	Ser	Leu	Ser	Ser	Leu	Thr
3205					3210					3215					
Thr	Val	Thr	Ile	Thr	Val	Leu	Asp	Ile	Asn	Asp	Asn	Pro	Pro	Val	Phe
3220					3225					3230					
Glu	Arg	Arg	Asp	Tyr	Leu	Val	Thr	Val	Pro	Glu	Asp	Thr	Ser	Pro	Gly
3235					3240					3245					
Thr	Gln	Val	Leu	Ala	Val	Phe	Ala	Thr	Ser	Lys	Asp	Ile	Gly	Thr	Asn
3250					3255					3260					
Ala	Glu	Ile	Thr	Tyr	Leu	Ile	Arg	Ser	Gly	Asn	Glu	Gln	Gly	Lys	Phe

3265		3270		3275		3280
Lys Ile Asn Pro	Lys Thr Gly Gly Ile	Ser Val Ser Glu Val	Leu Asp			
	3285		3290			3295
Tyr Glu Leu Cys	Lys Arg Phe Tyr	Leu Val Val Glu Ala	Lys Asp Gly			
	3300		3305			3310
Gly Thr Pro Ala	Leu Ser Ala Val	Ala Thr Val Asn	Ile Asn Leu Thr			
	3315		3320			3325
Asp Val Asn Asp	Asn Pro Pro Lys Phe	Ser Gln Asp Val	Tyr Ser Ala			
	3330		3335			3340
Val Ile Ser Glu	Asp Ala Leu Val Gly	Asp Ser Val Ile	Leu Leu Ile			
	3345		3350			3355
Ala Glu Asp Val	Asp Ser Gln Pro Asn	Gly Gln Ile His	Phe Ser Ile			
	3365		3370			3375
Val Asn Gly Asp	Arg Asp Asn Glu Phe	Thr Val Asp Pro	Val Leu Gly			
	3380		3385			3390
Leu Val Lys Val	Lys Lys Lys Leu	Asp Arg Glu Arg	Val Ser Gly Tyr			
	3395		3400			3405
Ser Leu Leu Val	Gln Ala Val Asp	Ser Gly Ile Pro	Ala Met Ser Ser			
	3410		3415			3420
Thr Ala Thr Val	Asn Ile Asp Ile	Ser Asp Val Asn	Asp Asn Ser Pro			
	3425		3430			3435
Val Phe Thr Pro	Ala Asn Tyr Thr	Ala Val Ile Gln	Glu Asn Lys Pro			
	3445		3450			3455
Val Gly Thr Ser	Ile Leu Gln Leu	Val Val Thr Asp	Arg Asp Ser Phe			
	3460		3465			3470
His Asn Gly Pro	Pro Phe Ser Phe	Ser Ile Leu Ser	Gly Asn Glu Glu			
	3475		3480			3485
Glu Glu Phe Val	Leu Asp Pro His	Gly Ile Leu Arg	Ser Ala Val Val			
	3490		3495			3500
Phe Gln His Thr	Glu Ser Leu Glu Tyr	Val Leu Cys Val	Gln Ala Lys			
	3505		3510			3515
Asp Ser Gly Lys	Pro Gln Gln Val	Ser His Thr Tyr	Ile Arg Val Arg			
	3525		3530			3535
Val Ile Glu Glu	Ser Thr His Lys	Pro Thr Ala Ile	Pro Leu Glu Ile			
	3540		3545			3550
Phe Ile Val Thr	Met Glu Asp Asp	Phe Pro Gly Gly	Val Ile Gly Lys			
	3555		3560			3565
Ile His Ala Thr	Asp Gln Asp Met	Tyr Asp Val Leu	Thr Phe Ala Leu			
	3570		3575			3580
Lys Ser Glu Gln	Lys Ser Leu Phe	Lys Val Asn Ser	His Asp Gly Lys			
	3585		3590			3595
Ile Ile Ala Leu	Gly Gly Leu Asp	Ser Gly Lys Tyr	Val Leu Asn Val			
	3605		3610			3615
Ser Val Ser Asp	Gly Arg Phe Gln	Val Pro Ile Asp	Val Val Val His			
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<212> PRT
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Leu Pro Gly Thr Gly Pro Leu Gly Phe His Phe Thr His Ser Ile Tyr
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Asn Ala Thr Val Tyr Glu Asn Ser Ala Ala Arg Thr Tyr Val Asn Ser
50 55 60
Gln Ser Arg Met Gly Ile Thr Leu Ile Asp Leu Ser Trp Asp Ile Lys
65 70 75 80
Tyr Arg Ile Val Ser Gly Asp Glu Glu Gly Phe Phe Lys Ala Glu Glu
85 90 95
Val Ile Ile Ala Asp Phe Cys Phe Leu Arg Ile Arg Thr Lys Gly Gly
100 105 110
Asn Ser Ala Ile Leu Asn Arg Glu Ile Gln Asp Asn Tyr Leu Leu Ile
115 120 125
Val Lys Gly Ser Val Arg Gly Glu Asp Leu Glu Ala Trp Thr Lys Val
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Thr Thr Tyr Ser Val Thr Ile Ala Glu Ser Thr Pro Leu Arg Thr Ser
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Val Ala Gln Val Thr Ala Thr Asp Ala Asp Ile Gly Ser Asn Gly Glu
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Phe Tyr Tyr Tyr Phe Lys Asn Lys Val Asp Leu Phe Ser Val His Pro
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Thr Ser Gly Val Ile Ser Leu Ser Gly Arg Leu Asn Tyr Asp Glu Lys
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Glu Arg Ile Asn Glu His Ala Pro Thr Ile His Val Val Thr His Val
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Pro Phe Ser Leu Glu Lys Glu Pro Thr Tyr Ala Val Val Thr Val Asp
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Asp Leu Asp Asp Gly Ala Asn Gly Glu Ile Glu Ser Val Ser Ile Val

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Ser Leu Ser Glu Ala Ala Pro Ile Asn Ser Ile Val Arg Ser Leu Asp		1775
	1780	1785
Asn Ser Pro Leu Val Ile Arg Ala Thr Asp Ala Asp Ser Asn Arg Asn		1790
	1795	1800
Ala Leu Leu Val Tyr Gln Ile Val Glu Ser Thr Ala Lys Lys Phe Phe		1805
	1810	1815
Thr Val Asp Ser Ser Thr Gly Ala Ile Arg Thr Ile Ala Asn Leu Asp		1820
1825	1830	1835
His Glu Thr Ile Ala His Phe His Phe His Val His Val Arg Asp Ser		1840
	1845	1850
Gly Ser Pro Gln Leu Thr Ala Glu Ser Pro Val Glu Val Asn Ile Glu		1855
	1860	1865
Val Thr Asp Val Asn Asp Asn Pro Pro Val Phe Thr Gln Ala Val Phe		1870
	1875	1880
Glu Thr Ile Leu Leu Leu Pro Thr Tyr Val Gly Val Glu Val Leu Lys		1885
	1890	1895
Val Ser Ala Thr Asp Pro Asp Ser Glu Val Pro Pro Glu Leu Thr Tyr		1900
1905	1910	1915
Ser Leu Met Glu Gly Ser Leu Asp His Phe Leu Ile Asp Ser Asn Ser		1920
	1925	1930
Gly Val Leu Thr Ile Lys Asn Asn Asn Leu Ser Lys Asp His Tyr Met		1935
	1940	1945
Leu Ile Val Lys Val Ser Asp Gly Lys Phe Tyr Ser Thr Ser Met Val		1950
	1955	1960
Thr Ile Met Val Lys Glu Ala Met Asp Ser Gly Leu His Phe Thr Gln		1965
	1970	1975
Ser Phe Tyr Ser Thr Ser Ile Ser Glu Asn Asn Thr Asn Ile Thr Lys		1980
1985	1990	1995
Val Ala Ile Val Asn Ala Val Gly Asn Arg Leu Asn Glu Pro Leu Lys		2000
	2005	2010
Tyr Ser Ile Leu Asn Pro Gly Asn Lys Phe Lys Ile Lys Ser Thr Ser		2015
	2020	2025
Gly Val Ile Gln Thr Thr Gly Val Pro Phe Asp Arg Glu Glu Gln Glu		2030
	2035	2040
Leu Tyr Glu Leu Val Val Glu Ala Ser Arg Glu Leu Asp His Leu Arg		2045
	2050	2055
Val Ala Arg Val Val Val Arg Val Asn Ile Glu Asp Ile Asn Asp Asn		2060
2065	2070	2075
Ser Pro Val Phe Val Gly Leu Pro Tyr Tyr Ala Ala Val Gln Val Asp		2080

2085					2090					2095						
Ala	Glu	Pro	Gly	Thr	Leu	Ile	Tyr	Gln	Val	Thr	Ala	Ile	Asp	Lys	Asp	
2100					2105					2110						
Lys	Gly	Pro	Asn	Gly	Glu	Val	Thr	Tyr	Val	Leu	Gln	Asp	Asp	Tyr	Gly	
2115					2120					2125						
His	Phe	Glu	Ile	Asn	Pro	Asn	Ser	Gly	Asn	Val	Ile	Leu	Lys	Glu	Ala	
2130					2135					2140						
Phe	Asn	Ser	Asp	Leu	Ser	Asn	Ile	Glu	Tyr	Gly	Val	Thr	Ile	Leu	Ala	
2145					2150					2155					2160	
Lys	Asp	Gly	Gly	Lys	Pro	Ser	Leu	Ser	Thr	Ser	Val	Glu	Leu	Pro	Ile	
2165					2170					2175						
Thr	Ile	Val	Asn	Lys	Ala	Met	Pro	Val	Phe	Asp	Lys	Pro	Phe	Tyr	Thr	
2180					2185					2190						
Ala	Ser	Val	Asn	Glu	Asp	Ile	Arg	Met	Asn	Thr	Pro	Ile	Leu	Ser	Ile	
2195					2200					2205						
Asn	Ala	Thr	Ser	Pro	Glu	Gly	Gln	Gly	Ile	Ile	Tyr	Ile	Ile	Ile	Asp	
2210					2215					2220						
Gly	Asp	Pro	Phe	Lys	Gln	Phe	Asn	Ile	Asp	Phe	Asp	Thr	Gly	Val	Leu	
2225					2230					2235					2240	
Lys	Val	Val	Ser	Pro	Leu	Asp	Tyr	Glu	Val	Thr	Ser	Ala	Tyr	Lys	Leu	
2245					2250					2255						
Thr	Ile	Arg	Ala	Ser	Asp	Ala	Leu	Thr	Gly	Ala	Arg	Ala	Glu	Val	Thr	
2260					2265					2270						
Val	Asp	Leu	Leu	Val	Asn	Asp	Val	Asn	Asp	Asn	Pro	Pro	Ile	Phe	Asp	
2275					2280					2285						
Gln	Pro	Thr	Tyr	Asn	Thr	Thr	Leu	Ser	Glu	Ala	Ser	Leu	Ile	Gly	Thr	
2290					2295					2300						
Pro	Val	Leu	Gln	Val	Val	Ser	Ile	Asp	Ala	Asp	Ser	Glu	Asn	Asn	Lys	
2305					2310					2315					2320	
Met	Val	His	Tyr	Gln	Ile	Val	Gln	Asp	Thr	Tyr	Asn	Ser	Thr	Asp	Tyr	
2325					2330					2335						
Phe	His	Ile	Asp	Ser	Ser	Ser	Gly	Leu	Ile	Leu	Thr	Ala	Arg	Met	Leu	
2340					2345					2350						
Asp	His	Glu	Leu	Val	Gln	His	Cys	Thr	Leu	Lys	Val	Arg	Ser	Ile	Asp	
2355					2360					2365						
Ser	Gly	Phe	Pro	Ser	Leu	Ser	Ser	Glu	Val	Leu	Val	His	Ile	Tyr	Ile	
2370					2375					2380						
Ser	Asp	Val	Asn	Asp	Asn	Pro	Pro	Val	Phe	Asn	Gln	Leu	Ile	Tyr	Glu	
2385					2390					2395					2400	
Ser	Tyr	Val	Ser	Glu	Leu	Ala	Pro	Arg	Gly	His	Phe	Val	Thr	Cys	Val	
2405					2410					2415						
Gln	Ala	Ser	Asp	Ala	Asp	Ser	Ser	Asp	Phe	Asp	Arg	Leu	Glu	Tyr	Ser	
2420					2425					2430						
Ile	Leu	Ser	Gly	Asn	Asp	Arg	Thr	Ser	Phe	Leu	Met	Asp	Ser	Lys	Ser	
2435					2440					2445						
Gly	Val	Ile	Thr	Leu	Ser	Asn	His	Arg	Lys	Gln	Arg	Met	Glu	Pro	Leu	
2450					2455					2460						
Tyr	Ser	Leu	Asn	Val	Ser	Val	Ser	Asp	Gly	Leu	Phe	Thr	Ser	Thr	Ala	
2465					2470					2475					2480	
Gln	Val	His	Ile	Arg	Val	Leu	Gly	Ala	Asn	Leu	Tyr	Ser	Pro	Ala	Phe	
2485					2490					2495						
Ser	Gln	Ser	Thr	Tyr	Val	Ala	Glu	Val	Arg	Glu	Asn	Val	Ala	Ala	Gly	
2500					2505					2510						
Thr	Lys	Val	Ile	His	Val	Arg	Ala	Thr	Asp	Gly	Asp	Pro	Gly	Thr	Tyr	
2515					2520					2525						
Gly	Gln	Ile	Ser	Tyr	Ala	Ile	Ile	Asn	Asp	Phe	Ala	Lys	Asp	Arg	Phe	

2530	2535	2540
Leu Ile Asp Ser Asn Gly Gln Val Ile Thr Thr Glu Arg Leu Asp Arg		
2545	2550	2555
Glu Asn Pro Leu Glu Gly Asp Val Ser Ile Phe Val Arg Ala Leu Asp		2560
	2565	2570
Gly Gly Gly Arg Thr Thr Phe Cys Thr Val Arg Val Ile Val Val Asp		2575
	2580	2585
Glu Asn Asp Asn Ala Pro Gln Phe Met Thr Val Glu Tyr Arg Ala Ser		2590
	2595	2600
Val Arg Ala Asp Val Gly Arg Gly His Leu Val Thr Gln Val Gln Ala		2605
	2610	2615
Ile Asp Pro Asp Asp Gly Ala Asn Ser Arg Ile Thr Tyr Ser Leu Tyr		2620
2625	2630	2635
Ser Glu Ala Ser Val Ser Val Ala Asp Leu Leu Glu Ile Asp Pro Asp		2640
	2645	2650
Asn Gly Trp Met Val Thr Lys Gly Asn Phe Asn Gln Leu Lys Asn Thr		2655
	2660	2665
Val Leu Ser Phe Phe Val Lys Ala Val Asp Gly Gly Ile Pro Val Lys		2670
	2675	2680
His Ser Leu Ile Pro Val Tyr Ile His Val Leu Pro Pro Glu Thr Phe		2685
	2690	2695
Leu Pro Ser Phe Thr Gln Ser Gln Tyr Ser Phe Thr Ile Ala Glu Asp		2700
2705	2710	2715
Thr Ala Ile Gly Ser Thr Val Asp Thr Leu Arg Ile Leu Pro Ser Gln		2720
	2725	2730
Asn Val Trp Phe Ser Thr Val Asn Gly Glu Arg Pro Glu Asn Asn Lys		2735
	2740	2745
Gly Gly Val Phe Val Ile Glu Gln Glu Thr Gly Thr Ile Lys Leu Asp		2750
	2755	2760
Lys Arg Leu Asp Arg Glu Thr Ser Pro Ala Phe His Phe Lys Val Ala		2765
	2770	2775
Ala Thr Ile Pro Leu Asp Lys Val Asp Ile Val Phe Thr Val Asp Val		2780
2785	2790	2795
Asp Ile Lys Val Leu Asp Leu Asn Asp Asn Lys Pro Val Phe Glu Thr		2800
	2805	2810
Ser Ser Tyr Asp Thr Ile Ile Met Glu Gly Met Pro Val Gly Thr Lys		2815
	2820	2825
Leu Thr Gln Val Arg Ala Ile Asp Met Asp Trp Gly Ala Asn Gly Gln		2830
	2835	2840
Val Thr Tyr Ser Leu His Ser Asp Ser Gln Pro Glu Lys Val Met Glu		2845
	2850	2855
Ala Phe Asn Ile Asp Ser Asn Thr Gly Trp Ile Ser Thr Leu Lys Asp		2860
2865	2870	2875
Leu Asp His Glu Thr Asp Pro Thr Phe Thr Phe Ser Val Val Ala Ser		2880
	2885	2890
Asp Leu Gly Glu Ala Phe Ser Leu Ser Ser Thr Ala Leu Val Ser Val		2895
	2900	2905
Arg Val Thr Asp Ile Asn Asp Asn Ala Pro Val Phe Ala Gln Glu Val		2910
	2915	2920
Tyr Arg Gly Asn Val Lys Glu Ser Asp Pro Pro Gly Glu Val Val Ala		2925
	2930	2935
Val Leu Ser Thr Trp Asp Arg Asp Thr Ser Asp Val Asn Arg Gln Val		2940
2945	2950	2955
Ser Tyr His Ile Thr Gly Gly Asn Pro Arg Gly Arg Phe Ala Leu Gly		2960
	2965	2970
Leu Val Gln Ser Glu Trp Lys Val Tyr Val Lys Arg Pro Leu Asp Arg		2975

2980					2985					2990						
Glu	Glu	Gln	Asp	Ile	Tyr	Phe	Leu	Asn	Ile	Thr	Ala	Thr	Asp	Gly	Leu	
2995					3000					3005						
Phe	Val	Thr	Gln	Ala	Met	Val	Glu	Val	Ser	Val	Ser	Asp	Val	Asn	Asp	
3010					3015					3020						
Asn	Ser	Pro	Val	Cys	Asp	Gln	Val	Ala	Tyr	Thr	Ala	Leu	Leu	Pro	Glu	
3025					3030					3035					3040	
Asp	Ile	Pro	Ser	Asn	Lys	Ile	Ile	Leu	Lys	Val	Ser	Ala	Lys	Asp	Ala	
3045					3050					3055						
Asp	Ile	Gly	Ser	Asn	Gly	Tyr	Ile	Arg	Tyr	Ser	Leu	Tyr	Gly	Ser	Gly	
3060					3065					3070						
Asn	Ser	Glu	Phe	Phe	Leu	Asp	Pro	Glu	Ser	Gly	Glu	Leu	Lys	Thr	Leu	
3075					3080					3085						
Ala	Leu	Leu	Asp	Arg	Glu	Arg	Ile	Pro	Val	Tyr	Ser	Leu	Met	Ala	Lys	
3090					3095					3100						
Ala	Thr	Asp	Gly	Gly	Gly	Arg	Phe	Cys	Gln	Ser	Asn	Ile	His	Leu	Ile	
3105					3110					3115					3120	
Leu	Glu	Asp	Val	Asn	Asp	Asn	Pro	Pro	Val	Phe	Ser	Ser	Asp	His	Tyr	
3125					3130					3135						
Asn	Thr	Cys	Val	Tyr	Glu	Asn	Thr	Ala	Thr	Lys	Ala	Leu	Leu	Thr	Arg	
3140					3145					3150						
Val	Gln	Ala	Val	Asp	Pro	Asp	Ile	Gly	Ile	Asn	Arg	Lys	Val	Val	Tyr	
3155					3160					3165						
Ser	Leu	Ala	Asp	Ser	Ala	Gly	Gly	Val	Phe	Ser	Ile	Asp	Ser	Ser	Ser	
3170					3175					3180						
Gly	Ile	Ile	Ile	Leu	Glu	Gln	Pro	Leu	Asp	Arg	Glu	Gln	Gln	Ser	Ser	
3185					3190					3195					3200	
Tyr	Asn	Ile	Ser	Val	Arg	Ala	Thr	Asp	Gln	Ser	Pro	Gly	Gln	Ser	Leu	
3205					3210					3215						
Ser	Ser	Leu	Thr	Thr	Val	Thr	Ile	Thr	Val	Leu	Asp	Ile	Asn	Asp	Asn	
3220					3225					3230						
Pro	Pro	Val	Phe	Glu	Arg	Arg	Asp	Tyr	Leu	Val	Thr	Val	Pro	Glu	Asp	
3235					3240					3245						
Thr	Ser	Pro	Gly	Thr	Gln	Val	Leu	Ala	Val	Phe	Ala	Thr	Ser	Lys	Asp	
3250					3255					3260						
Ile	Gly	Thr	Asn	Ala	Glu	Ile	Thr	Tyr	Leu	Ile	Arg	Ser	Gly	Asn	Glu	
3265					3270					3275					3280	
Gln	Gly	Lys	Phe	Lys	Ile	Asn	Pro	Lys	Thr	Gly	Gly	Ile	Ser	Val	Ser	
3285					3290					3295						
Glu	Val	Leu	Asp	Tyr	Glu	Leu	Cys	Lys	Arg	Phe	Tyr	Leu	Val	Val	Glu	
3300					3305					3310						
Ala	Lys	Asp	Gly	Gly	Thr	Pro	Ala	Leu	Ser	Ala	Val	Ala	Thr	Val	Asn	
3315					3320					3325						
Ile	Asn	Leu	Thr	Asp	Val	Asn	Asp	Asn	Pro	Pro	Lys	Phe	Ser	Gln	Asp	
3330					3335					3340						
Val	Tyr	Ser	Ala	Val	Ile	Ser	Glu	Asp	Ala	Leu	Val	Gly	Asp	Ser	Val	
3345					3350					3355					3360	
Ile	Leu	Leu	Ile	Ala	Glu	Asp	Val	Asp	Ser	Gln	Pro	Asn	Gly	Gln	Ile	
3365					3370					3375						
His	Phe	Ser	Ile	Val	Asn	Gly	Asp	Arg	Asp	Asn	Glu	Phe	Thr	Val	Asp	
3380					3385					3390						
Pro	Val	Leu	Gly	Leu	Val	Lys	Val	Lys	Lys	Lys	Leu	Asp	Arg	Glu	Arg	
3395					3400					3405						
Val	Ser	Gly	Tyr	Ser	Leu	Leu	Val	Gln	Ala	Val	Asp	Ser	Gly	Ile	Pro	
3410					3415					3420						
Ala	Met	Ser	Ser	Thr	Ala	Thr	Val	Asn	Ile	Asp	Ile	Ser	Asp	Val	Asn	

3425	3430	3435	3440
Asp Asn Ser Pro Val Phe Thr	Pro Ala Asn Tyr Thr Ala Val Ile Gln		
	3445	3450	3455
Glu Asn Lys Pro Val Gly Thr Ser	Ile Leu Gln Leu Val Val Thr Asp		
	3460	3465	3470
Arg Asp Ser Phe His Asn Gly Pro	Phe Ser Phe Ser Ile Leu Ser		
	3475	3480	3485
Gly Asn Glu Glu Glu Phe Val Leu Asp	Pro His Gly Ile Leu Arg		
	3490	3495	3500
Ser Ala Val Val Phe Gln His Thr Glu Ser	Leu Glu Tyr Val Leu Cys		
3505	3510	3515	3520
Val Gln Ala Lys Asp Ser Gly Lys Pro	Gln Gln Val Ser His Thr Tyr		
	3525	3530	3535
Ile Arg Val Arg Val Ile Glu Glu Ser	Thr His Lys Pro Thr Ala Ile		
	3540	3545	3550
Pro Leu Glu Ile Phe Ile Val Thr Met	Glu Asp Asp Phe Pro Gly Gly		
	3555	3560	3565
Val Ile Gly Lys Ile His Ala Thr Asp	Gln Asp Met Tyr Asp Val Leu		
	3570	3575	3580
Thr Phe Ala Leu Lys Ser Glu Gln Lys Ser	Leu Phe Lys Val Asn Ser		
3585	3590	3595	3600
His Asp Gly Lys Ile Ile Ala Leu Gly	Gly Leu Asp Ser Gly Lys Tyr		
	3605	3610	3615
Val Leu Asn Val Ser Val Ser Asp Gly	Arg Phe Gln Val Pro Ile Asp		
	3620	3625	3630
Val Val Val His Val Glu Gln Leu Val	His Glu Met Leu Gln Asn Thr		
	3635	3640	3645
Val Thr Ile Arg Phe Glu Asn Val Ser Pro	Glu Asp Phe Val Gly Leu		
	3650	3655	3660
His Met His Gly Phe Arg Arg Thr Leu Arg	Asn Ala Val Leu Thr Gln		
3665	3670	3675	3680
Lys Gln Asp Ser Leu Arg Ile Ile Ser	Ile Gln Pro Val Ala Gly Thr		
	3685	3690	3695
Asn Gln Leu Asp Met Leu Phe Ala Val	Glu Met His Ser Ser Glu Phe		
	3700	3705	3710
Tyr Lys Pro Ala Tyr Leu Ile Gln Lys	Leu Ser Asn Ala Arg Arg His		
	3715	3720	3725
Leu Glu Asn Ile Met Arg Ile Ser Ala Ile	Leu Glu Lys Asn Cys Ser		
	3730	3735	3740
Gly Leu Asp Cys Gln Glu Gln His Cys	Glu Gln Gly Leu Ser Leu Asp		
3745	3750	3755	3760
Ser His Ala Leu Met Thr Tyr Ser Thr	Ala Arg Ile Ser Phe Val Cys		
	3765	3770	3775
Pro Arg Phe Tyr Arg Asn Val Arg Cys	Thr Cys Asn Gly Gly Leu Cys		
	3780	3785	3790
Pro Gly Ser Asn Asp Pro Cys Val Glu	Lys Pro Cys Pro Gly Asp Met		
	3795	3800	3805
Gln Cys Val Gly Tyr Glu Ala Ser Arg	Arg Pro Phe Leu Cys Gln Cys		
	3810	3815	3820
Pro Pro Gly Lys Leu Gly Glu Cys Ser	Gly His Thr Ser Leu Ser Phe		
3825	3830	3835	3840
Ala Gly Asn Ser Tyr Ile Lys Tyr Arg	Leu Ser Glu Asn Ser Lys Glu		
	3845	3850	3855
Glu Asp Phe Lys Leu Ala Leu Arg Leu	Arg Thr Leu Gln Ser Asn Gly		
	3860	3865	3870
Ile Ile Met Tyr Thr Arg Ala Asn Pro	Cys Ile Ile Leu Lys Ile Val		

3875	3880	3885
Asp Gly Lys Leu Trp Phe Gln Leu Asp Cys Gly Ser Gly Pro Gly Ile		
3890	3895	3900
Leu Gly Ile Ser Gly Arg Ala Val Asn Asp Gly Ser Trp His Ser Val		
3905	3910	3915
Phe Leu Glu Leu Asn Arg Asn Phe Thr Ser Leu Ser Leu Asp Asp Ser		
3925	3930	3935
Tyr Val Glu Arg Arg Ala Pro Leu Tyr Phe Gln Thr Leu Ser Thr		
3940	3945	3950
Glu Ser Ser Ile Tyr Phe Gly Ala Leu Val Gln Ala Asp Asn Ile Arg		
3955	3960	3965
Ser Leu Thr Asp Thr Arg Val Thr Gln Val Leu Ser Gly Phe Gln Gly		
3970	3975	3980
Cys Leu Asp Ser Val Ile Leu Asn Asn Asn Glu Leu Pro Leu Gln Asn		
3985	3990	3995
Lys Arg Ser Ser Phe Ala Glu Val Val Gly Leu Thr Glu Leu Lys Leu		
4005	4010	4015
Gly Cys Val Leu Tyr Pro Asp Ala Cys Lys Arg Ser Pro Cys Gln His		
4020	4025	4030
Gly Gly Ser Cys Thr Gly Leu Pro Ser Gly Gly Tyr Gln Cys Thr Cys		
4035	4040	4045
Leu Ser Gln Phe Thr Gly Arg Asn Cys Glu Ser Glu Ile Thr Ala Cys		
4050	4055	4060
Phe Pro Asn Pro Cys Arg Asn Gly Gly Ser Cys Asp Pro Ile Gly Asn		
4065	4070	4075
Thr Phe Ile Cys Asn Cys Lys Ala Gly Leu Thr Gly Val Thr Cys Glu		
4085	4090	4095
Glu Asp Ile Asn Glu Cys Glu Arg Glu Glu Cys Glu Asn Gly Gly Ser		
4100	4105	4110
Cys Val Asn Val Phe Gly Ser Phe Leu Cys Asn Cys Thr Pro Gly Tyr		
4115	4120	4125
Val Gly Gln Tyr Cys Gly Arg Pro Val Val Val Pro Asn Ile Gln Ala		
4130	4135	4140
Gly His Ser Tyr Val Gly Lys Glu Glu Leu Ile Gly Ile Ala Val Val		
4145	4150	4155
Leu Phe Val Ile Phe Ile Leu Val Val Leu Phe Ile Val Phe Arg Lys		
4165	4170	4175
Lys Val Phe Arg Lys Asn Tyr Ser Arg Asn Asn Ile Thr Leu Val Gln		
4180	4185	4190
Asp Pro Ala Thr Ala Ala Leu Leu Asn Lys Ser Asn Gly Ile Pro Phe		
4195	4200	4205
Arg Asn Leu Arg Gly Ser Gly Asp Gly Arg Asn Val Tyr Gln Glu Val		
4210	4215	4220
Gly Pro Pro Gln Val Pro Val Arg Pro Met Ala Tyr Thr Pro Cys Phe		
4225	4230	4235
Gln Ser Asp Ser Arg Ser Asn Leu Asp Lys Ile Val Asp Gly Leu Gly		
4245	4250	4255
Gly Glu His Gln Glu Met Thr Thr Phe His Pro Glu Ser Pro Arg Ile		
4260	4265	4270
Leu Thr Ala Arg Arg Gly Val Val Val Cys Ser Val Ala Pro Asn Leu		
4275	4280	4285
Pro Ala Val Ser Pro Cys Arg Ser Asp Cys Asp Ser Ile Arg Lys Asn		
4290	4295	4300
Gly Trp Asp Ala Gly Thr Glu Asn Lys Gly Val Asp Asp Pro Gly Glu		
4305	4310	4315
Val Thr Cys Phe Ala Gly Ser Asn Lys Gly Ser Asn Ser Glu Val Gln		

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	4325		4330		4335
Ser	Leu	Ser	Ser	Phe	Gln
	4340		4345		4350
Val	Thr	Val	Ile	Gln	Leu
	4355		4360		4365
Glu	Val	Ser	Val	Met	Asp
	4370		4375		4380
Trp	Asp	Thr	Ser	Asp	Trp
	4385		4390		4395
Glu	Val	Pro	Asn	Tyr	Glu
	4405		4410		4415
Ser	Thr	Arg	Glu	Leu	Glu
	4420		4425		4430
Asp	Ser	Glu	Tyr	Pro	Pro
	4435		4440		4445
Gln	Leu	Pro	Pro	Pro	Leu
	4450		4455		4460
Leu	Pro	Pro	Ser	Gln	Pro
	4465		4470		4475
Cys	Arg	Arg	Arg	Pro	Gln
	4485		4490		4495
Pro	Phe	Pro	Asn	Glu	Thr
	4500		4505		4510
Phe	Ser	Thr	Phe	Ala	Val
	4515		4520		4525
Pro	Ala	Asp	Ser	Val	Ser
	4530		4535		4540
Ser	Ser	Asp	Val	Ser	Ala
	4545		4550		4555
Met	Ser	Asp	Tyr	Glu	Ser
	4565		4570		4575
Ile	Pro	Phe	Val	Glu	Thr
	4580		4585		